

REMARKS

Reconsideration of the subject application as currently amended is respectfully requested.

Objection of claims

Claims 8 and 9 are objected to for failing to depend on its respective base claim. Claim 8 and 9 has been amended to depend on independent claim 1.

Rejection of claims under 35 U.S.C. §112 ¶ 2

The Examiner rejects claims 1-16 under 35 U.S.C. §112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention.

As to independent claim 1, the Examiner points out that "...a plurality of packet transceiver systems, each transceiver module..." is indefinite because it is unclear as whether the "transceiver systems" and the "transceiver module" are synonymous or distinct. Claim 1 has been amended to succinctly recite that the plurality of packet transceiver systems includes a plurality of transceiver modules to overcome the 35 U.S.C. §112 ¶ 2.

Rejection of claims under 35 U.S.C. §102(b) and 35 U.S.C. §103(a)

The Examiner rejects claims 1-9, 11, 17-21, 24 and 25 under 35 U.S.C. §102(b) as being anticipated by Patent No. 6,415,132 (herein after "Sabat Jr.").

The Examiner further rejects claims 10, 12-15, 22 and 23 under 35 U.S.C. §103(a) as being obvious over Sabat Jr., and lastly rejects claim 16 under 35 U.S.C. §103(a) as being obvious over Sabat Jr. in view of Patent No. 6,504,831 (herein after "Greenwood").

Applicants respectfully traverse and submit that the rejection is improper for at least the reasons presented below.

Briefly, the subject application pertains to a cellular communication system having several novel features that render it superior to the prior art of record. In one aspect of the invention, the system includes a novel communication scheme. As discussed in the specification and illustrated in Fig. 1, in standard cellular systems, each cell included an RF antenna in communication with several wireless devices (e.g., cell phones) and a base transceiver station. The transceiver station collects the RF signals from the operating cell phones, bundles them together and transmits them to a legacy network or other network. The network is in communication with many other cell phones as well. Importantly, signals between the base station and the network are transmitted over T1 line or other similar line. The T1 provides communication channels and once the capacity of these channels is reached, no more signals can be accommodated. In this manner, communication is established between cell phones in the cell and land-based phones or other cell phones.

In the present invention, a completely different architecture is used. Instead of a standard base station, each cell is provided with a packet transceiver system. This packet transceiver system receives the RF signals from the

antenna and converts them into packaged data streams using an IP protocol. The system further includes a package transport medium. The medium may be implemented by a pair of copper wires or optical fiber set up to form a communication ring. The ring connects the packet transceiver systems to a single hub. At the hub, the data streams are separated into signals corresponding to each of the cells for further processing. The hub may include one or more standard base stations in which case, the signals from packets are converted into RF signals for handling these base stations.

The independent claims describe the inventive system. The Examiner takes the position, that these claims are anticipated by Sabat. The Applicant disagrees. Sabat discloses a wireless system modified as follows. In standard wireless systems, adjacent cells use different frequencies to avoid interference between each other. Sabat changes this process and suggests using adjacent cells using the same frequencies. In this manner, if one cell has too many cell phones to handle all the traffic, an adjacent cell can take carry some of the extra signals.

As discussed above, a novel feature of the present invention is that the communication between cells and a hub occurs over a special transport media using IP protocol. In Sabat standard T1 protocol is used. In one aspect , the present invention also addresses the capacity problem. The information traffic on the media is monitored and if traffic from one cell reaches a high threshold, the packets are adjusted to provide more capacity for that cell. However, all the

signals are still transmitted over a common transport media, not separate T1 lines.

More specifically, in the claimed system, a mobile station (MS) determines whether an RF network capacity requires adjustment at a remote radio unit (RRU) with an appropriate packet transceiver system . Once the RF domain status of low, average or high is determined, the status of the RF domain is used as input parameters for the continuous network optimization (CNO) module. The previous RF domain status of low, average or high are then translated into specific bandwidth increments that are invoked automatically using preset policies.

These bandwidth increments are then sent to a traffic consolidator unit (TCU) located at a hub, which then extracts the encoded baseband traffic bit streams. After extraction at the TCU, the TCU converts the encoded baseband traffic bit stream into an RF signal. It is further determined whether the baseband processing capacity requires adjustment. If it is determined that adjustment is required, a CNO located at the hub adjusts the baseband processing capacity into an encoded baseband traffic bit stream. A base transceiver station (BTS) located at the hub receives encoded bit stream and then extracts the bit stream to perform baseband processing.

The hub then packetizes the processed baseband traffic bit stream for transmission to a mobile switching office (MSO) for determining whether the network capacity requires adjustment. If adjustment is required, then another CNO located at the MSO adjusts the network capacity. Once the network

capacity is adjusted, a TCU located at the MSO depacketizes, formats and routes the traffic bit stream to a base station controller (BCS).

It will be recognized by one possessing ordinary skill in the relevant art that the above novel cellular network infrastructure reduces overall operation costs, enable sharing of network resources and increasing network-level reliability.

Contrary to the subject application, Sabat Jr. discusses a method and system for controlling a wireless communication network for soft handoff between adjacent cells. In accordance with Sabat Jr. system, the system includes a plurality of base transceiver system (BTS, 12-1...12-n) coupled to a Hub Interface Converter (HIC, 16). The HIC is further coupled to a plurality of CMIs (CMI, 20-1...20-c) through a broadband distributed network (18) within a plurality of cells (22-1...22-5). Each cell is further divided into a plurality of sectors (24-1...24-3) in which a corresponding CMI is deployed for each sector with an associating antenna element (26-1...26-3). Moreover, the system of Sabat Jr. is concerned with adjacent cells operating at the same carrier frequency during an initial low capacity state to form a simulcast group. This simulcast group allows subscribers traveling in adjacent cells to operate in the same radio channel as other adjacent cells or sectors. Thus Sabat Jr. is only concerned with the method and system of soft handoff between adjacent cell sites in order for a user to operate in the same radio channel as other adjacent cells.

However, On page 10 of the present Office Action, the Examiner correctly points out that Sabat Jr. fails to anticipate the limitations of claim 13:

Claim 13

“...a continuous network optimization (CNO) application for continuously monitoring network performance indicators and automatically provisioning sufficient bandwidth in response; ...”

On page 11 of the present Office Action the Examiner contends that Column 7, Lines 1-3 of Sabat Jr. renders obvious the limitation of claim 13.

However, Applicants respectfully disagree. In view of amended claim 1, Sabat Jr. fails to teach or suggest a hub that includes a continuous network optimization (CNO) application that continuously monitors network performance indicators for automatically provisioning sufficient bandwidth. The maintenance and logistics of a BTS is neither the same nor the equivalent of a CNO automatically provisioning sufficient bandwidth based on continuously monitoring network performance indicators. At best, the maintenance and logistics of a central BTS 12 as disclosed in Sabat Jr. is to more efficiently access the physical device as opposed to continuously monitoring network performance indicators for automatically provisioning sufficient bandwidth. Thus, there is no disclosure in Sabat Jr. with respect to this limitation.

Additionally, the Examiner contends that Greenwood cures the deficiencies of Sabat Jr. regarding claim 16, reciting that

“...the CNO application is comprised of three sub processes...”

However, Applicants respectfully disagree. The portions relied upon by the Examiner in Greenwood fails to teach or suggest a CNO that includes a three sub-process for automatically determining what level of baseband resources are required. At best, Greenwood discloses an optical fiber 18 that transmits signals in the reverse direction by receiving RF signals in the range of 1850-1910 MHz. The 1850-1910 MHz signal is fed into a signal processor 75-1 for down converting the signal into a range of 5-52 MHz. The down converted signal is then fed into an optical modulator to upband the information into an optical carrier in the range of 1310 nanometers, which is then transmitted in the reverse direction within the optical fiber 18. Greenwood is only concerned with the conversion of RF signals from MHz to an optical carrier for transmission in the reverse direction. There is no disclosure in Greenwood of a CNO that includes three sub-processes for automatically determining the level of baseband resources that are required. Thus, Greenwood fails to teach or suggest claim 1 as amended.

To expedite prosecution of this application to allowance, the examiner is invited to call the Applicants' undersigned representative to discuss any issues relating to this application.

Respectfully submitted,



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